

REMARKS

This Preliminary Amendment and Request for Continued Examination (RCE) application are being filed in response to the final Office Action having a mailing date of June 4, 2003 and in response to the Advisory Action having a mailing date of December 30, 2003. On December 4, 2003, the applicant filed a response to the final Office Action and a Notice of Appeal, which extends the deadline for filing this response to the final Office Action by two months to February 4, 2004.

In the Advisory Action of December 30, 2003, the Examiner indicated that he would not enter the applicant's proposed amendments of December 4, 2003, because they raise new issues that would require further consideration and/or search, and because of other reasons enumerated by the Examiner in the Advisory Action. Accordingly, this Preliminary Amendment is being filed to address the rejections of the Examiner in the final Office Action. Claims 1, 4, and 7-12 are amended as shown. More specifically, independent claims 1, 4, and 9-12 are amended to recite certain distinctive features. At least some (but not all) of these amendments duplicate the amendments that were filed on December 4, 2003 but which were not entered by the Examiner. New claims 13-20 are added, of which claims 13-15 were previously submitted (but not entered) in the amendment of December 4, 2003. No new matter has been added. With this amendment, claims 1-20 are pending in the application.

In the final Office Action, the Examiner rejected claim 11 under 35 U.S.C. § 112, second paragraph, as being indefinite. More specifically, claim 11 was rejected as being incomplete for omitting details concerning the use of the output files. This rejection of claim 11 was maintained in the Advisory Action. To overcome this rejection, claim 11 is amended herein to remove the limitations that recite the output files. Accordingly, the applicant requests that the rejection under 35 U.S.C. § 112, second paragraph be withdrawn. Independent claim 4 as originally filed also recited output files. Independent claim 4 is amended herein to remove the limitations that recite output files, thereby ensuring that this claim complies with 35 U.S.C. § 112, second paragraph.

Independent claim 12 was rejected under 35 U.S.C. § 101 for being directed to non-statutory subject matter. The Examiner suggested that the claim be corrected to include embodying the computer program on a computer-readable media, for which the applicant thanks the Examiner. Accordingly, claim 12 has been amended to recite that the computer program is embodied in at least one machine-readable medium, thereby overcoming the rejection under 35 U.S.C. § 101. Independent claim 9 is also amended to recite that the computer program is embodied in at least one machine-readable medium, thereby also further ensuring that independent claim 9 complies with 35 U.S.C. § 101.

In the final Office Action, claims 1-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Ramsey (article entitled “Specifying Representations of Machine Instructions”) and Gupta (U.S. Patent No. 6,385,757). Claims 10-12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hanono (article entitled “ISDL: An Instruction Set Description Language for Retargetability”) in view of Ramsey. For the reasons set forth below, the applicant respectfully requests the Examiner to reconsider and to withdraw the rejections.

In the final Office Action, the Examiner stated that SLED is not an architecture description language (ADL). Various differences between ADL and SLED were discussed in the applicant’s amendment of March 5, 2003 and in the response of December 4, 2003. To provide context and for the convenience of the Examiner, portions of the applicant’s prior arguments are re-presented herein.

More specifically and in response to the Examiner, the applicant has herein amended independent claims 1, 4, and 9 to make more apparent the distinctions over the prior art. Specifically, the applicant has amended independent claim 1 to recite “repeating said generating for each line in said opcode summary table, resulting in an ADL representation of the opcode summary table such that the ADL representation generates a representation of structure.” The applicant has amended independent claim 4 to recite “generating root code for a hierarchy in architecture description language format based on said grouping, wherein the root code in architecture description language generates a representation of structure.” The applicant has also

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amended claim 9 to recite “a third computer code section to generate an encoded representation of said grouping, wherein the encoded representation of said grouping includes an Architecture Description Language representation that generates a representation of structure.”

In his previous response of March 5, 2003, the applicant quoted extensively from his application in relation to the term “ADL,” and such quotation provides support for the “representation of structure” claim amendments. For example, the applicant quoted the following from pages 3 and 4 of his application:

The power of an ADL lies in the fact that, using an ADL description of a microprocessor, one can automatically create various programming tools for that processor. In order to create, for example, an assembler for a microprocessor, one may write a program in *ADL that describes the microprocessor*. Then, *an assembler generator could be used to create an assembler from the ADL description of the microprocessor*. In order to create a simulator, one would also need to input the behavior of each instruction into the ADL description into the simulator generator.

...

After the programming tools are created, the new microprocessor is tested. Once tested, the design may be improved in various ways, including modifying the instruction set. Once the product is improved, new programming tools must be created, which results in additional delays associated with the re-coding of the ADL. Furthermore, the ADL code must be debugged before it can reliably be used to test the microprocessor.

(emphasis added). One having ordinary skill in the art will appreciate that a shorthand notation for the quoted material is that the applicant’s ADL is used to produce a “representation of structure.” The present amendments to claims 1, 4, and 9 more clearly recite this feature. In addition, the applicant has also herein added dependent claims 13, 14, and 15 which further define the applicant’s ADL representation of structure.

As was implicitly noted in the applicant’s previous response, the SLED of Ramsey does not generate a representation of structure. Specifically, the applicant directs the Examiner’s attention to Table 1 of *Architecture Description Languages for Retargetable Compilation*, W. Qin and S. Malik (a copy of this article is included with this filing), which clearly shows that SLED does not generate a representation of structure:

	MIMOLA	UDL/I	nML	ISDL	SLED/λ-RTL	Maril	HMDES	TDL
category	HDL	HDL	behavioral	behavioral	behavioral	mixed	mixed	mixed
compiler	MSSQ, Record	COACH	CBC, CHESS	Aviv	vpo	Marion	IMPACT	PROPAN
simulator	MSSB/U	COACH	Sign/Sim, Checkers	GENSIM				
behavioral representation	RT-level	RT-level	RT-lists	RT-lists	RT-lists	RT-lists		RT-lists
hierarchical behavioral representation			yes	yes	yes	no	yes	yes
structural representation	netlist	netlist				resource	resource	resource
ILP compiler support	yes	yes	(yes)	(yes)	no	no	(yes)	no
control path	yes	yes	no	no	no	no	no	no
constraint model				Boolean		resource	resource	resource, Boolean
other features							pre-processing support	pre-processing support

Because Ramsey does not disclose, teach, or suggest that its SLED representation can be used to represent structure, the amended independent claims 1, 4, and 9 are now clearly allowable over Ramsey. Adding the reference of Gupta to Ramsey does not cure the deficiencies of Ramsey. There is nothing disclosed, taught, or suggested in Gupta that the technology of Gupta can be combined with the SLED technology of Ramsey to provide capability to generate a representation of structure using SLED.

Independent claim 10 has been amended to recite generating code “which includes a representation of structure.” Independent claim 11 has been amended to recite “repeating said cycling and determining until an end of the opcode super group table is reached, including generating a representation of structure using the architecture description language format.” Independent claim 12 is amended to recite a “representation of structure.” These are features that are not disclosed, taught, or suggested by the SLED technology of Ramsey. The technology of Hanono does not cure the deficiencies of Ramsey by providing a SLED format that can be used to represent structure. Therefore, even if the technologies of both Ramsey and Hanono is combined, the features recited in these claims would still not be provided by the

resulting product. Accordingly, independent claims 10-12 are allowable over the cited references.

New dependent claims 13-15 further define the applicant's ADL representation of structure, including representations for microprocessor, assembler generator, and a simulator generator, respectively. Additional amendments have been made to claims 1, 4, and 8-12 to clarify that these claims do not fall within 35 U.S.C. § 112, sixth paragraph. Additional amendments are made to these claims and/or other claims to provide proper antecedent basis and/or to clarify the language used therein.

New independent claims 16-18 are added. Independent claim 16 is a method claim that recites using the ADL representation as input to generate a simulator tool. Independent claim 17 is a method claim that recites using at least some of the code in ADL format as input to generate a simulator tool. Independent claim 18 recites a machine-readable medium having instructions stored thereon, with the instructions including instructions to use the encoded representation in ADL format to generate a simulator tool. Support for these features can be found, for instance, in Figure 2 and the accompanying description of the present application. These are features that are not disclosed, taught, or suggested by the cited references.

For example, Ramsey uses SLED. As detailed in the table above from the Qin article, SLED does not have a simulator feature. As also shown in the table, SLED lacks both a simulator feature and a feature to support cycle simulation. The references of Gupta and/or Hanono do not cure the deficiencies of Ramsey. A resulting combination would still use the SLED of Ramsey, and as clearly depicted in the table above, SLED does not provide any sort of support for a simulator feature. Accordingly, new claims 16-18 are allowable.

New claims 19-20 recite various features that are distinctive over the prior art. These claims are also allowable.

A second Supplemental Information Disclosure Statement is submitted herewith to ensure that the Examiner has access to and considers the article by Qin. This document has a publication date of 2002, which technically does not make this document prior art. However, the

applicant has nevertheless decided to submit this reference for the Examiner's review to ensure that the Examiner can fully consider its contents and carefully evaluate the patentability of the applicant's claims in view of the cited prior art. It is kindly requested that the attached form PTO-1449 that lists the Qin reference be initialed by the Examiner to indicate consideration of the reference, and that the initialed form be returned with the next communication.

The appropriate fees to cover payment for the additional claims is included with this amendment, as well as the RCE fee. The applicant also thanks the Examiner for his professionalism and for taking the time to speak with the various attorneys who have participated in the prosecution of this application.

Overall, none of the references singly or in any motivated combination disclose, teach, or suggest what is recited in the independent claims. Thus, given the above amendments and accompanying remarks, the independent claims are now in condition for allowance. The dependent claims that depend directly or indirectly on these independent claims are likewise allowable based on at least the same reasons and based on the recitations contained in each dependent claim.

If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to the allowability of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 622-4900.

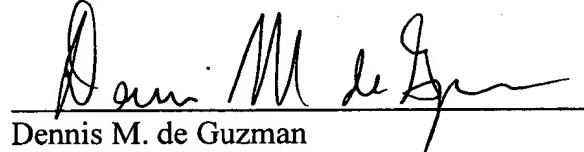
The Commissioner is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

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and Reply to Advisory Action dated December 30, 2003.

All of the claims remaining in the application are now clearly allowable.
Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC



Dennis M. de Guzman
Registration No. 41,702

DMD:jl

Enclosure:
Postcard

701 Fifth Avenue, Suite 6300
Seattle, Washington 98104-7092
Phone: (206) 622-4900
Fax: (206) 682-6031

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